

NEWS FROM THE ROCKEFELLER UNIVERSITY

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Public Information

BIOGRAPHY OF PROFESSOR EDWARD L. TATUM

Edward L. Tatum, professor of The Rockefeller University, is a biochemical geneticist whose major research has been devoted to studies of the genetics and metabolism of bacteria, yeast, and molds. In 1958, he shared the Nobel Prize for physiology or medicine with George W. Beadle and Joshua Lederberg. Doctors Tatum and Beadle were cited for "their discovery that genes act by regulating specific chemical processes."

Dr. Tatum's investigations, at the University of Wisconsin in the early 1930s, into the nutritional requirements of microorganisms resulted in the identification of thiamine as a growth factor for propionic acid bacteria. In 1937, he joined Dr. Beadle at Stanford University in genetic studies of eye pigmentation mechanisms in the fruit fly, Drosophila. They subsequently isolated and identified kynurenine as the hormone responsible for its brown eye color. Their collaboration continued with the development of means for producing mutations artificially in the bread mold, Neurospora, in an attempt to understand the ways in which genes control biochemical

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processes. These pioneering techniques, employing X-rays, led to the discovery by Tatum and Beadle, in 1941, of the inheritance of nutritional deficiencies in Neurospora, and have since been applied to studies of inherited metabolic disorders in plants and in man. In addition, heritable changes, such as those found in Neurospora, have subsequently been found in almost every species of bacteria investigated. One of these, Escherichia coli, was the subject of a series of experiments by Dr. Tatum and Dr. Lederberg at Yale University in the mid-1940s. Using two mutant strains, developed by Dr. Tatum, they established for the first time that sexual reproduction occurs in bacteria. Dr. Tatum was also responsible for the biosynthesis of the amino acid, tryptophan, with D.M. Bonner.

Dr. Tatum was born in Boulder, Colorado, on December 14, 1909. He attended the University of Chicago for two years and transferred to the University of Wisconsin, where his father had been appointed chairman of the Department of Pharmacology. He received an A.B. degree in chemistry in 1931 and continued his studies at the University of Wisconsin, where he earned an M.S. degree in microbiology in 1932 and a Ph.D. degree in biochemistry in 1934. Following a year as a research assistant in biochemistry at Wisconsin, Dr. Tatum did research in bacteriological chemistry at Utrecht, The Netherlands, as a General Education Board Fellow. From 1937 to 1941, he worked as a research associate in the Biology Department of Stanford

University, where he was appointed an assistant professor in 1942. He joined the faculty of Yale University in 1945 as an associate professor of botany, and was subsequently appointed professor. In 1947, he was named professor of microbiology at Yale. The following year, he returned to Stanford University as professor of biochemistry and served as chairman of its department of biochemistry before coming to The Rockefeller University (then known as The Rockefeller Institute for Medical Research) in 1957 as professor.

Dr. Tatum received the Remsen Award of the American Chemical Society in 1953 for his contributions to a new field of biology, biochemical genetics. He has been the recipient of honorary degrees from the University of Wisconsin, Rutgers University, Gustavus Adolphus College, Trinity College, the University of Notre Dame, and Yeshiva University.

He holds memberships in the National Academy of Sciences and in the American Philosophical Society, and he serves on the scientific advisory panels of Research to Prevent Blindness, the National Foundation, and the Fels Foundation. He is a former president of the Harvey Society (1964-65) and a former chairman of the board of trustees of the Cold Spring Harbor Laboratory of Quantitative Biology. A member of the National Science Board of the National Science Foundation from 1956 to 1968, Dr. Tatum also served on the Board of Scientific Consultants of the Sloan-Kettering Institute, and, for three years, he was a member of the Scientific Advisory Committee of the Massachusetts General Hospital. He has also served as Chairman of the Genetics Study Section of the National Institutes of Health (1964-66) and as president and vice president of the Scientists' Institute for Public Information.

The author of numerous articles in scientific journals, Dr. Tatum is currently coeditor with Dr. A. Neuberger, of Frontiers of Biology, and also serves as a member of the advisory board of Perspectives in Biology and Medicine. He is a former member of the editorial boards of the Journal of Biological Chemistry, Genetics, Science, and Biochimica et Biophysica Acta.

Dr. Tatum is married to the former Elsie Bergland, and they live in New York City. His first marriage to the former June Alton ended in divorce, and his second wife, the late Viola Kantrowitz Tatum, died in April, 1974. He has two daughters, Barbara, and Mrs. Margaret Easter.

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October, 1975

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